

KIC 003116412

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R_{\star} (R_{\odot}) | T_{\star} (K) | R_p (R_{\oplus}) | S_p (S_{\oplus}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 003116412-01 | OBS | 1115.01 | 12.992052 | 136.320218 | 264.9 | 6.139 | 31.2 | 33.2 | 1.24 | 5765 | 2.28 | 133.23 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 003116412-01 | OBS | PC | 0.99 | 0 | 0 | 0 | 0 | NO_COMMENT |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

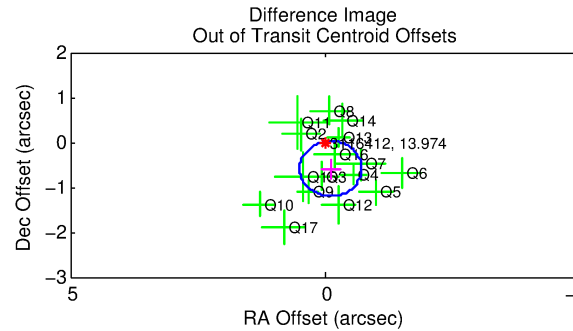
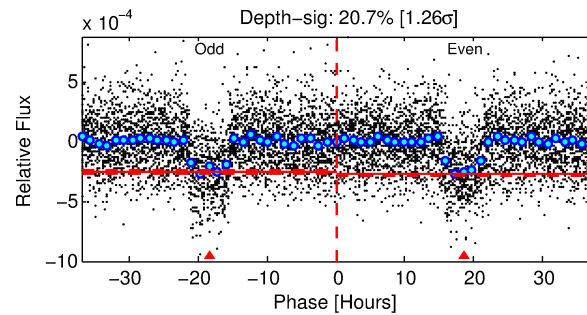
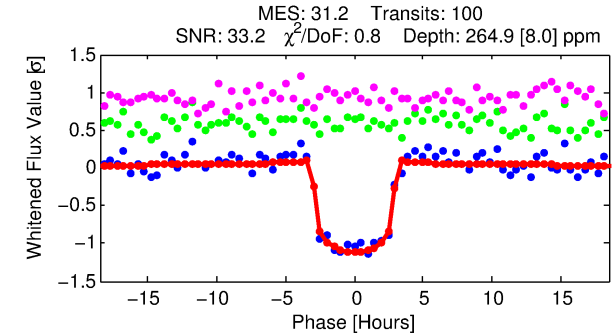
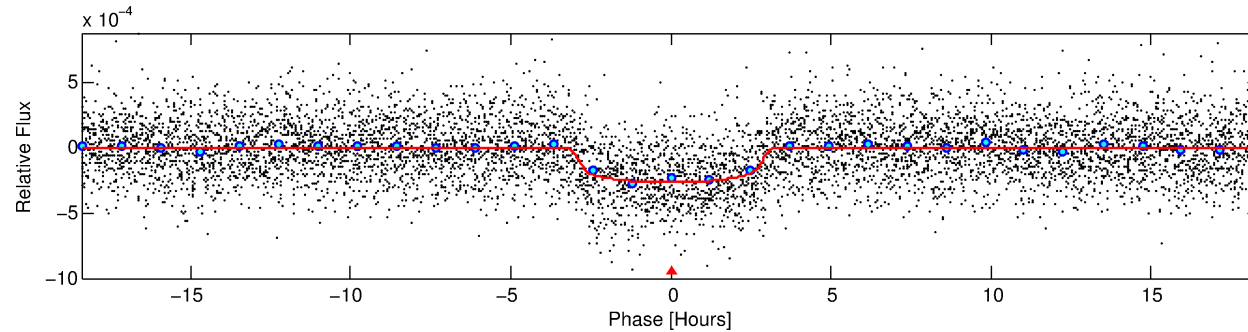
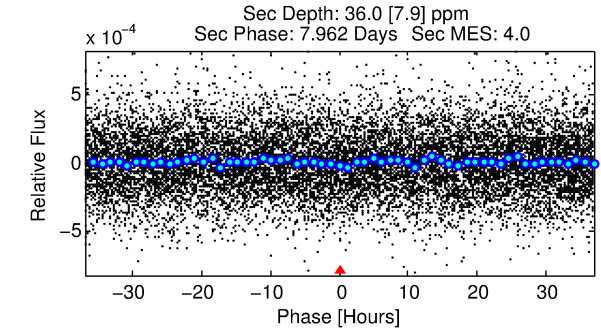
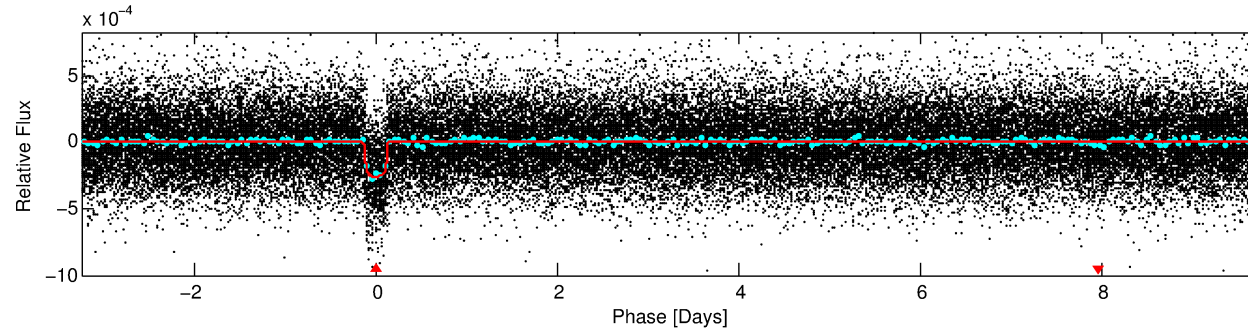
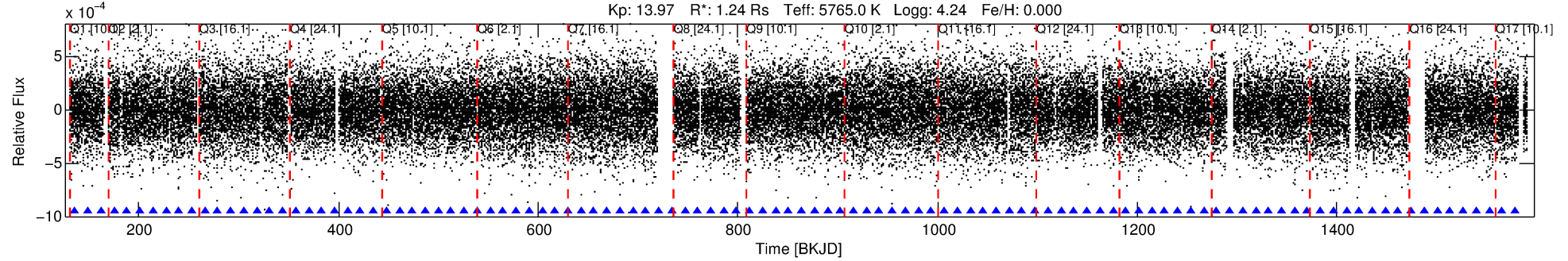
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003116412-01

No Significant Match Found

DV One-Page Summary

KIC: 3116412 Candidate: 1 of 1 Period: 12.992 d
KOI: K01115.01 Corr: 0.987



DV Fit Results:

Period = 12.99205 [0.00005] d
Epoch = 136.3202 [0.0033] BKJD
Rp/R* = 0.0168 [0.0025]
a/R* = 9.48 [6.36]
b = 0.83 [0.25]
Seff = 133.23 [38.97]
Teq = 866 [63] K
Rp = 2.28 [0.51] Re
a = 0.1070 [0.0183] AU
Ag = 43.59 [20.25] [2.10σ]
Teffp = 3442 [326] K [7.76σ]

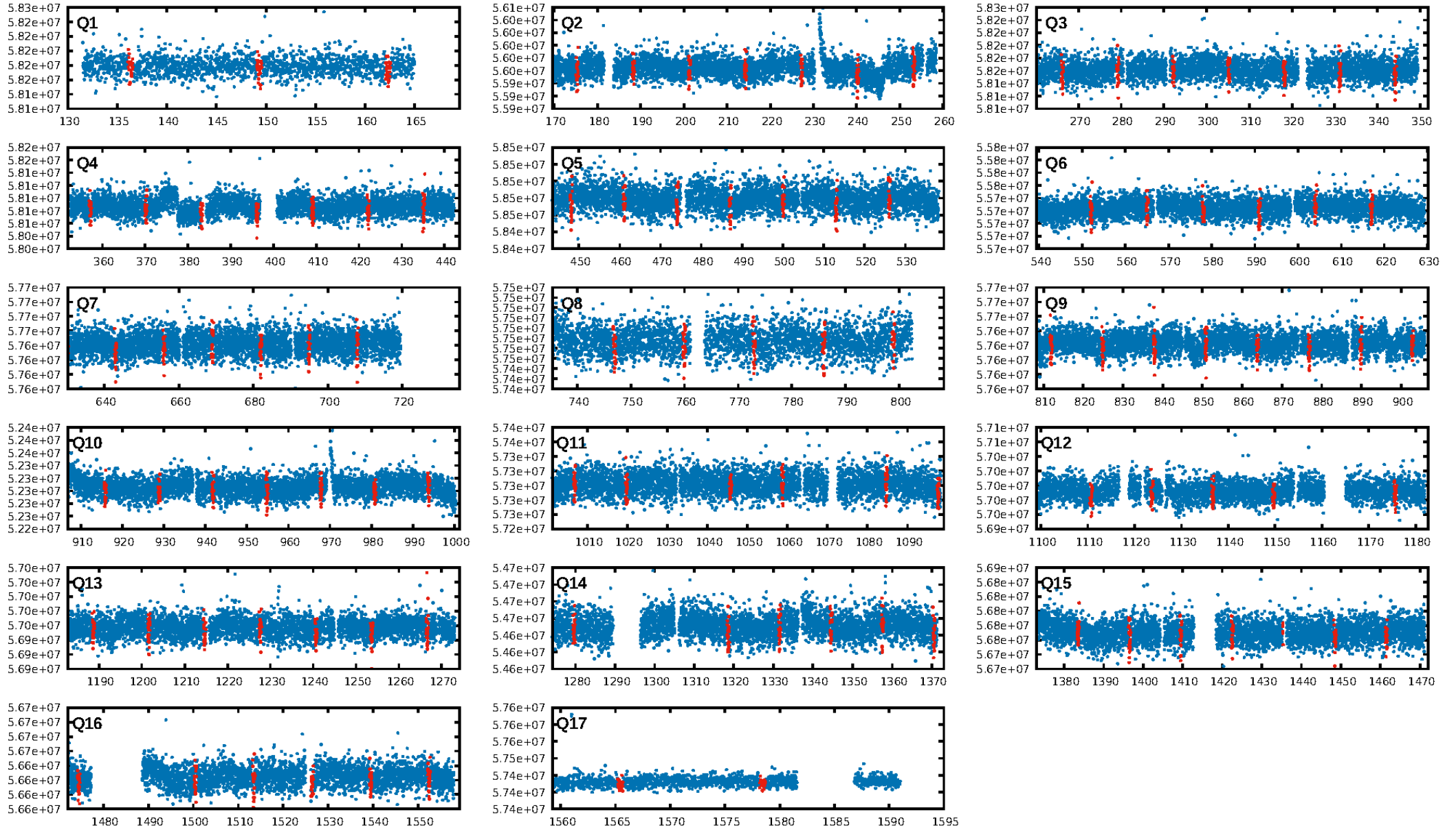
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.15e-204
RollingBand-fgt: 1.00 [95/95]
GhostDiagnostic-chr: 3.991
Centroid-sig: 10.8%
Centroid-so: 0.407 arcsec [1.14σ]
OotOffset-rm: 0.601 arcsec [2.95σ]
KicOffset-rm: 0.577 arcsec [2.81σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

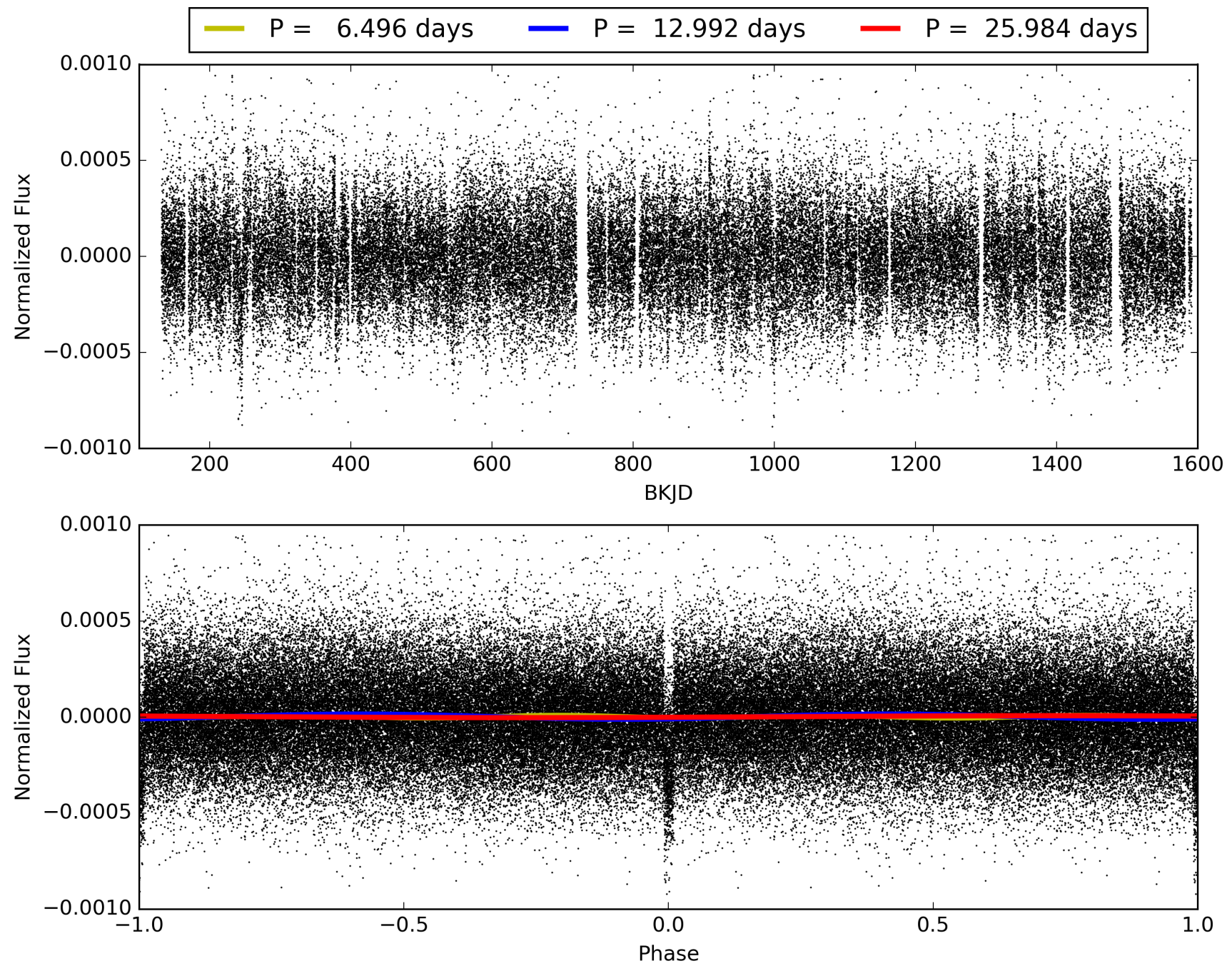
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:50:10 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003116412-01, PDC Light Curves

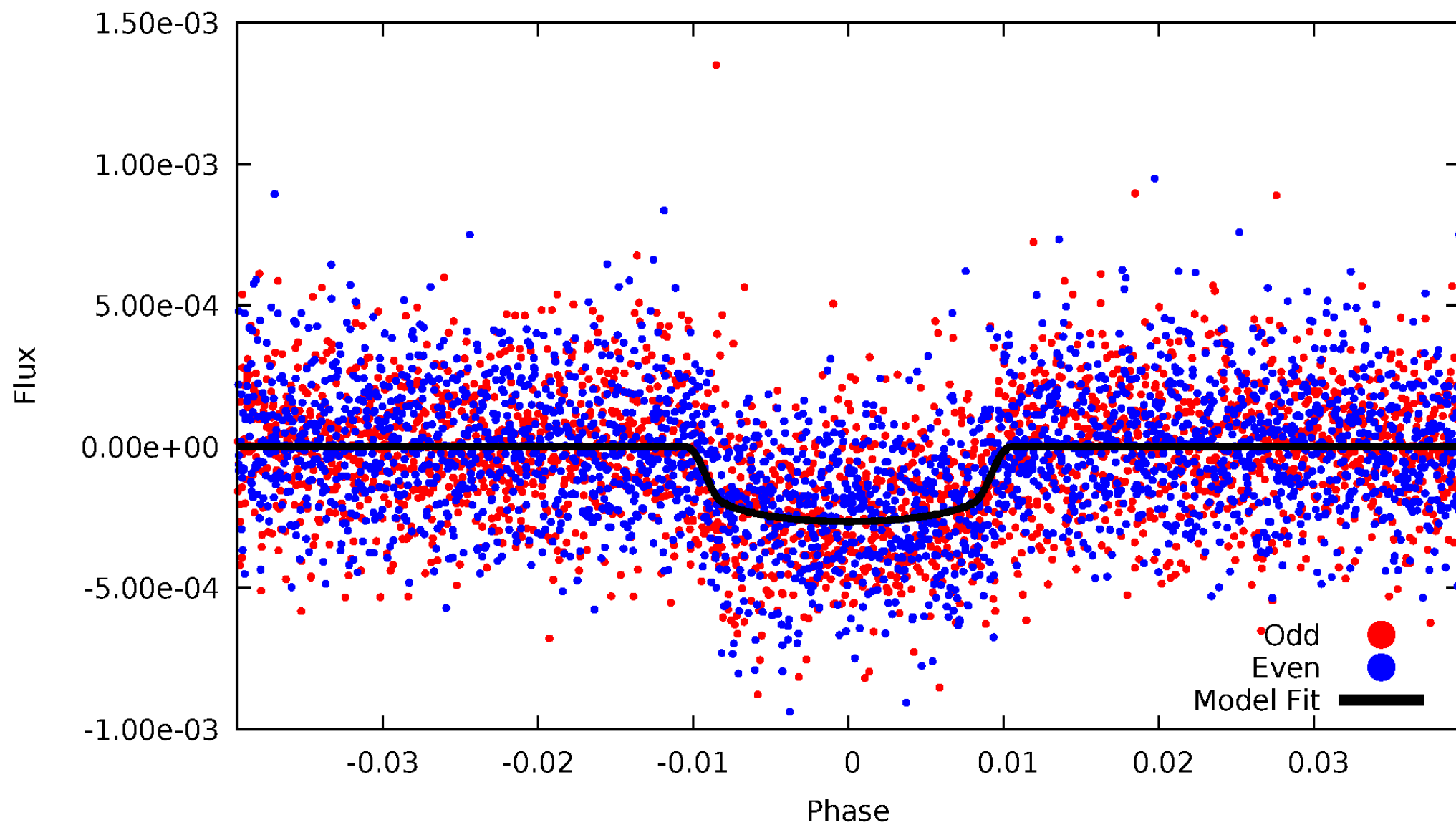


TCE 003116412-01



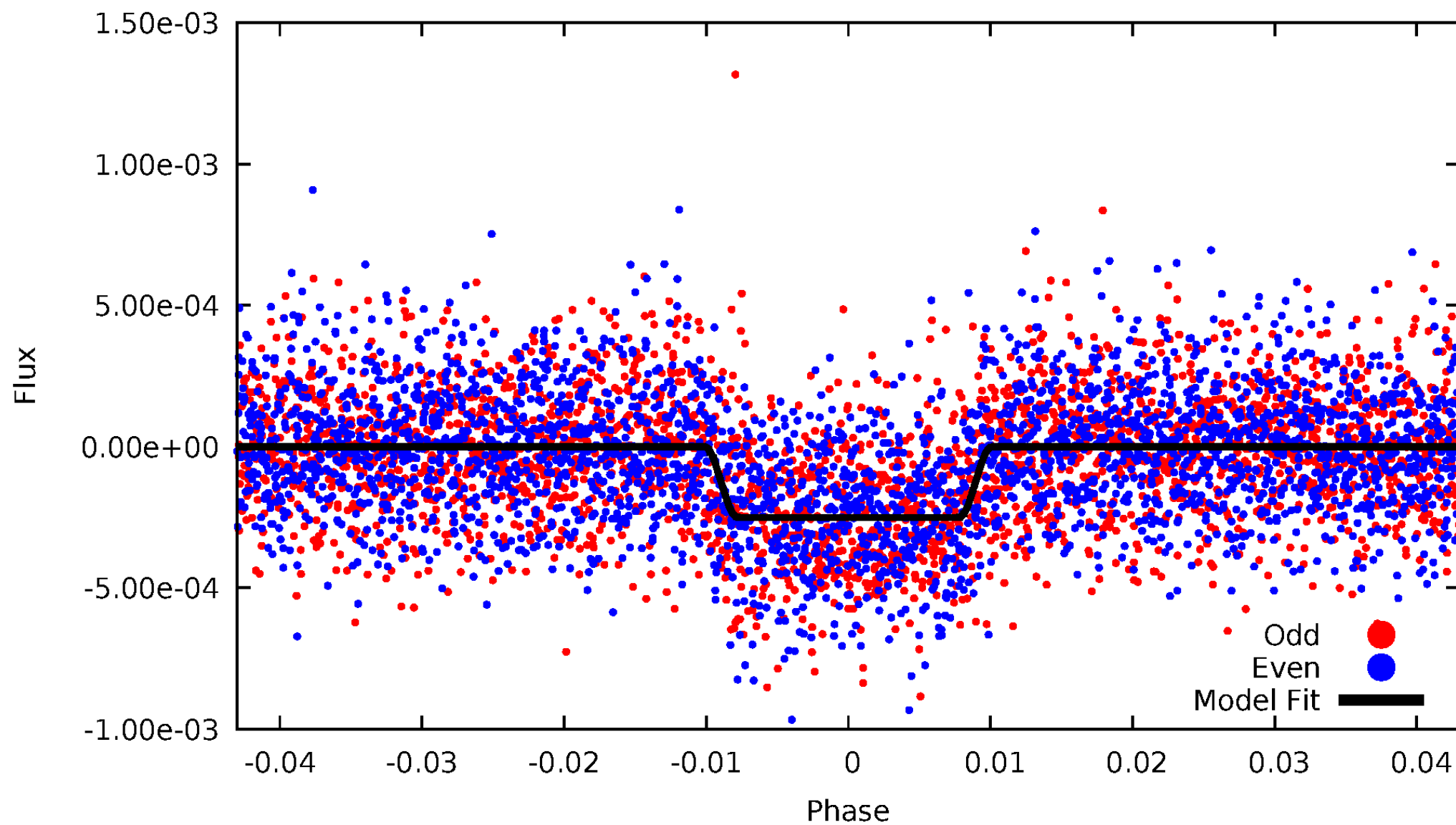
DV Odd/Even

TCE 003116412-01



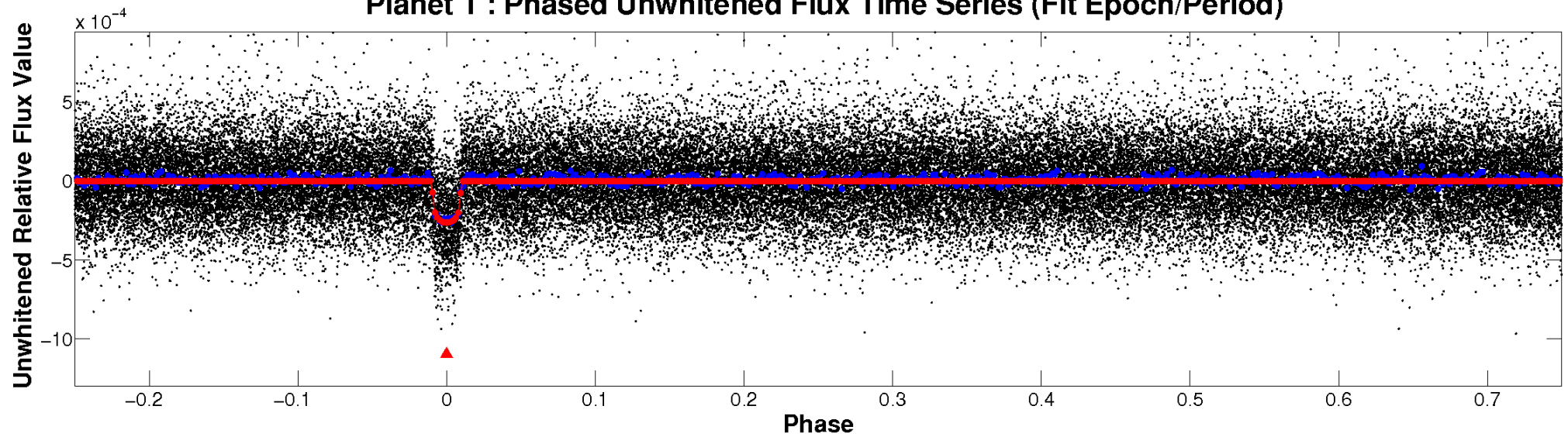
ALT Odd/Even

TCE 003116412-01

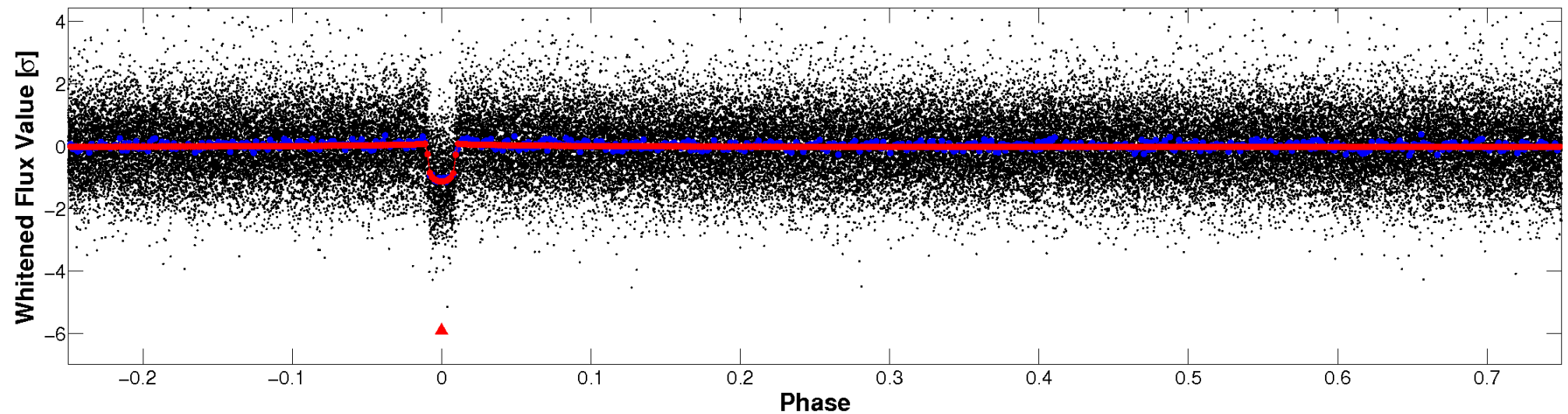


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

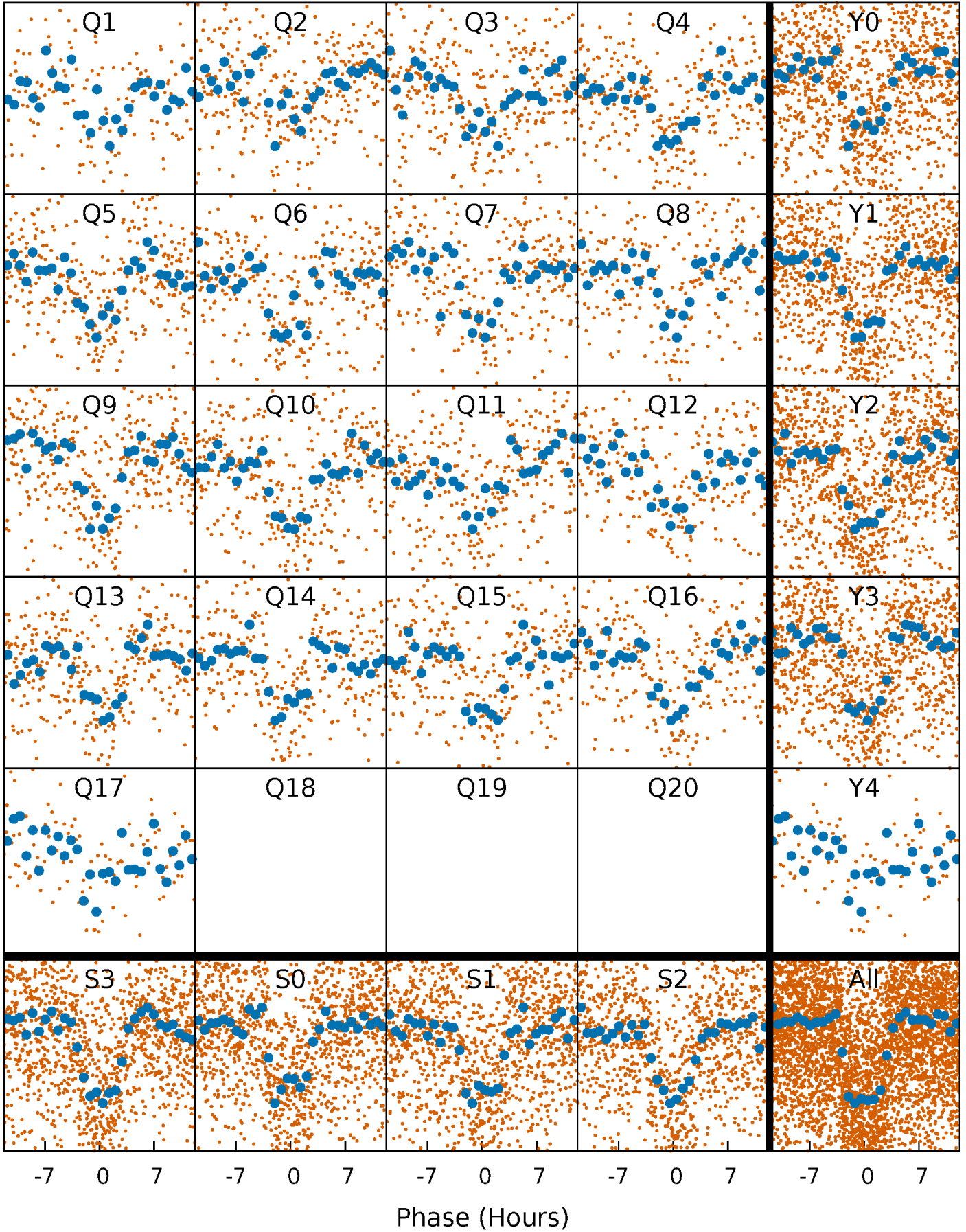


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



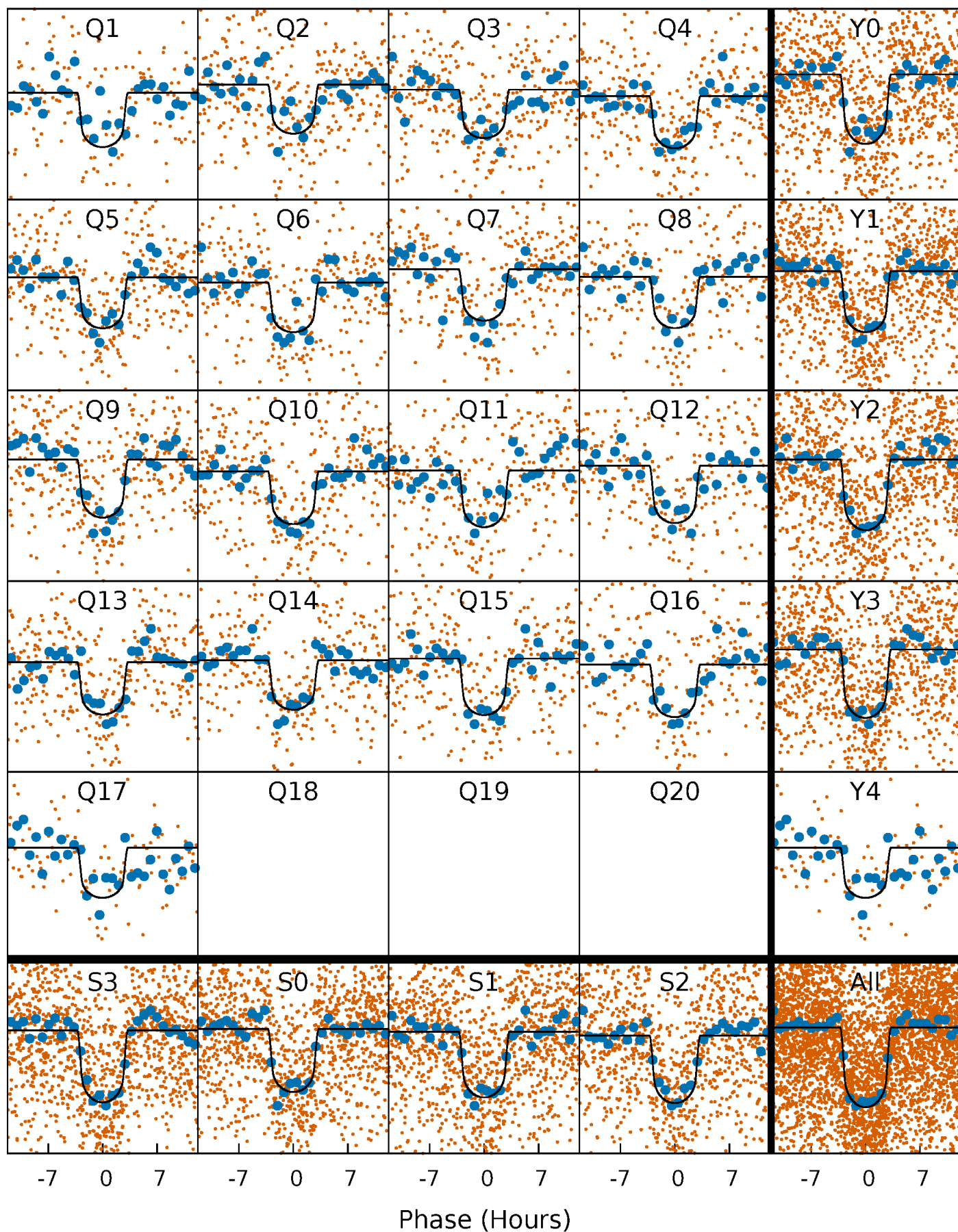
PDC Quarter-Phased Transit Curves

TCE 003116412-01 P= 12.992052 Days $T_0=136.320218$ (BKJD)



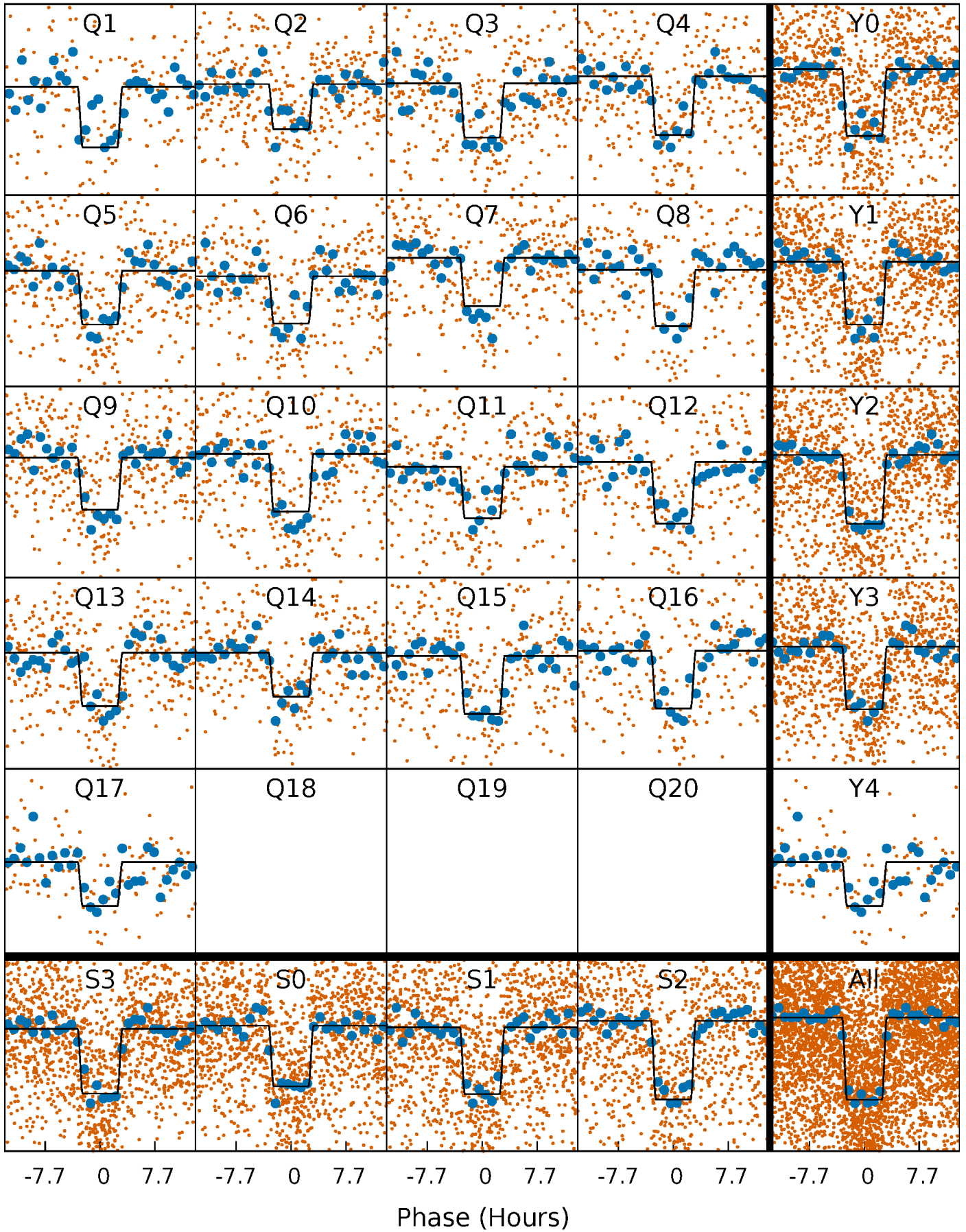
DV Quarter-Phased Transit Curves

TCE 003116412-01 P= 12.992052 Days $T_0=136.320218$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

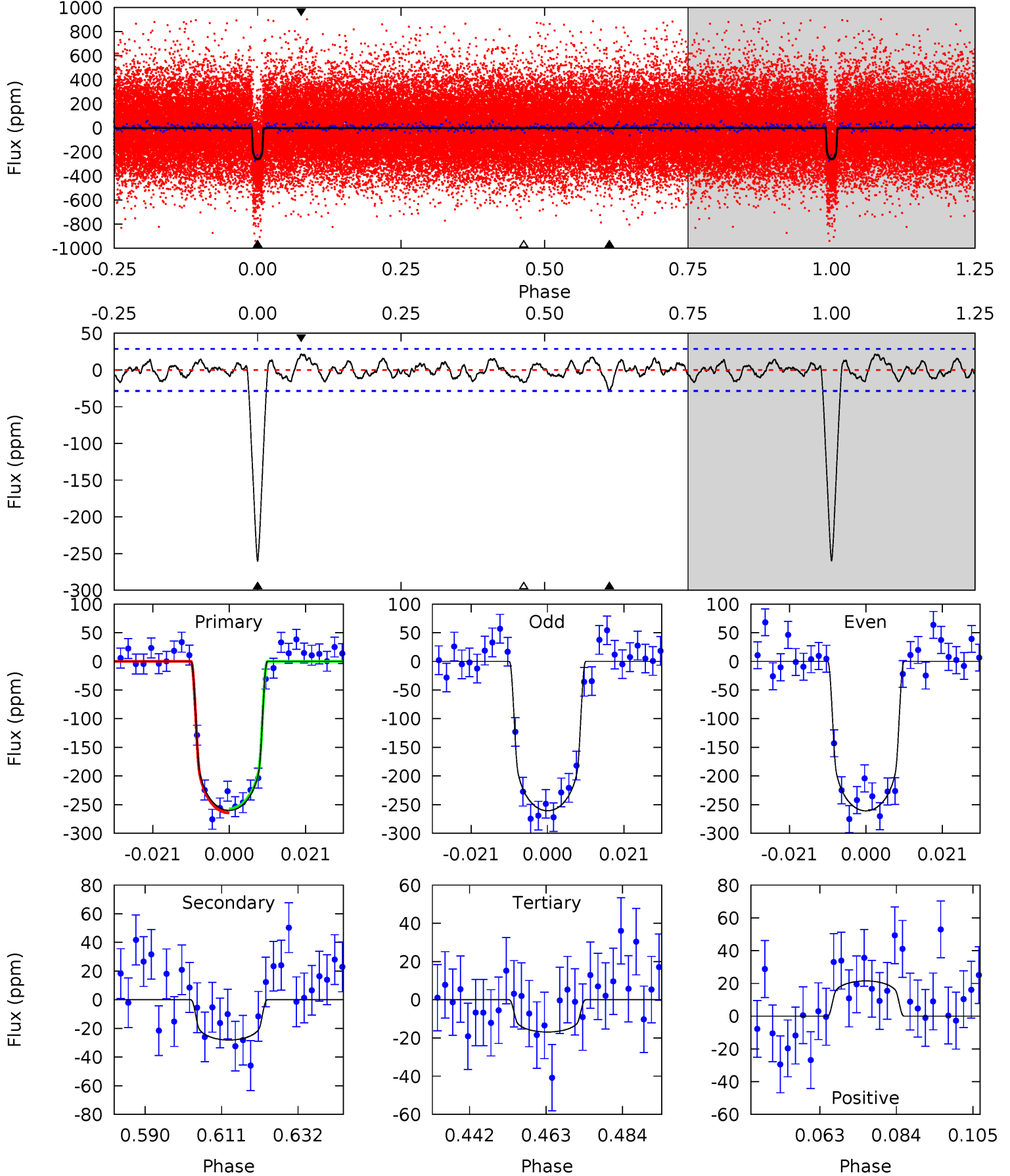
TCE 003116412-01 P= 12.991820 Days $T_0=136.333203$ (BKJD)



DV Model-Shift Uniqueness Test

003116412-01, $P = 12.992052$ Days, $E = 123.328166$ Days

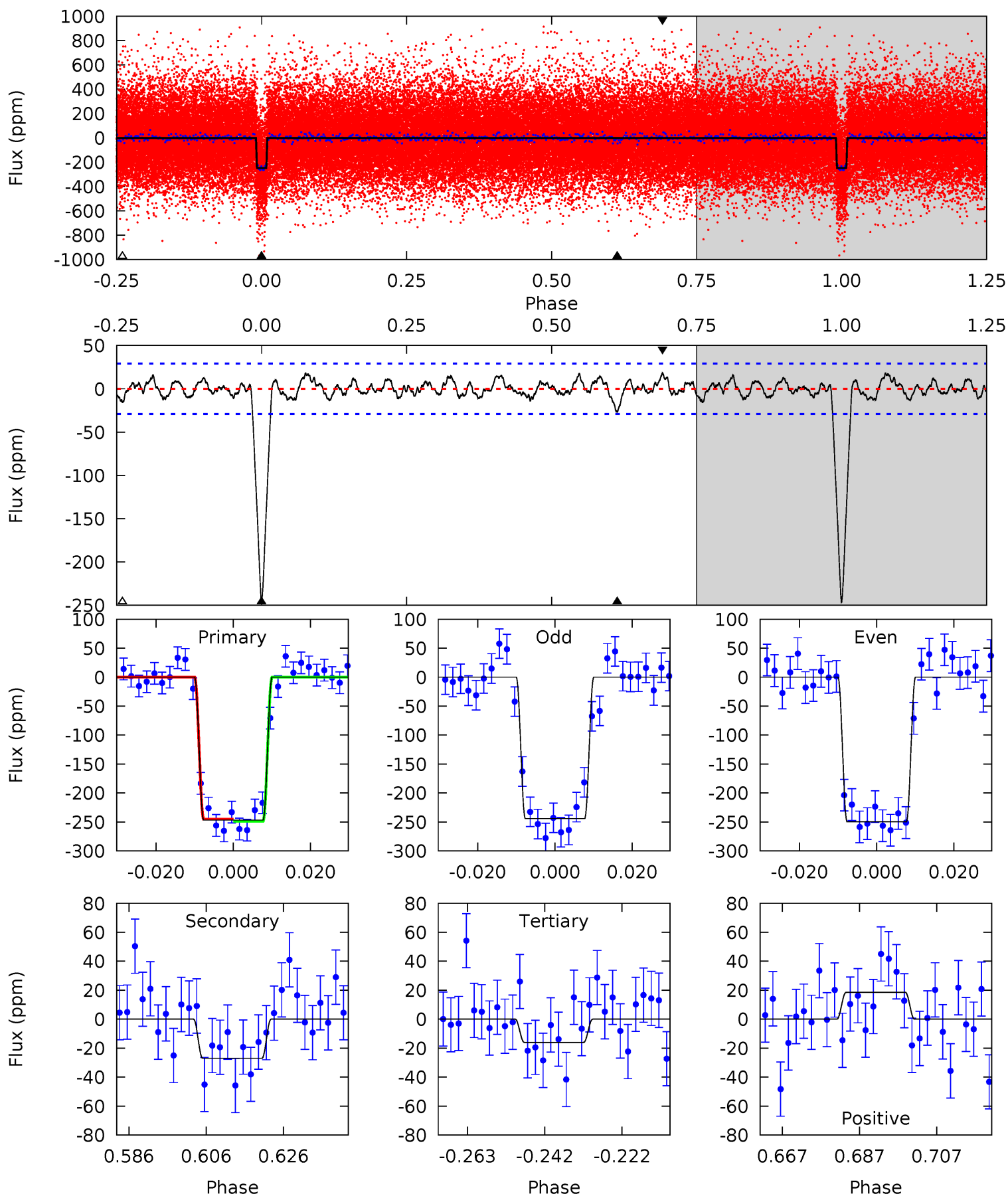
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 44.4 | 4.80 | 2.88 | 3.67 | 4.88 | 2.31 | 1.38 | 41.5 | 40.7 | 1.92 | 1.13 | 0.02 | 1.03 | 0.08 | 0.59 |



Alt Model-Shift Uniqueness Test

003116412-01, $P = 12.991820$ Days, $E = 123.341383$ Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 41.4 | 4.52 | 2.69 | 3.10 | 4.89 | 2.32 | 1.19 | 38.8 | 38.3 | 1.83 | 1.42 | 0.44 | 1.05 | 0.07 | 0.29 |



Stellar Parameters For KIC 003116412

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5765^{+105}_{-116} | $4.236^{+0.168}_{-0.112}$ | $0.000^{+0.150}_{-0.150}$ | $1.242^{+0.188}_{-0.209}$ | $0.968^{+0.080}_{-0.066}$ | $0.713^{+0.557}_{-0.227}$ |
| | +2%/-2% | +4%/-3% | +inf%/-inf% | +15%/-17% | +8%/-7% | +78%/-32% |
| Source | SPE57 | SPE57 | SPE57 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003116412-01 / KOI 1115.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|--------------------|----------------------|------------------|
| DV | -28 ± 6 | $2.24^{+0.43}_{-0.39}$ | 1205^{+57}_{-68} | 3649^{+253}_{-225} | 35^{+18}_{-12} |
| Alt. | -27 ± 6 | $2.11^{+0.44}_{-0.39}$ | 1204^{+52}_{-67} | 3692^{+278}_{-224} | 38^{+22}_{-14} |

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

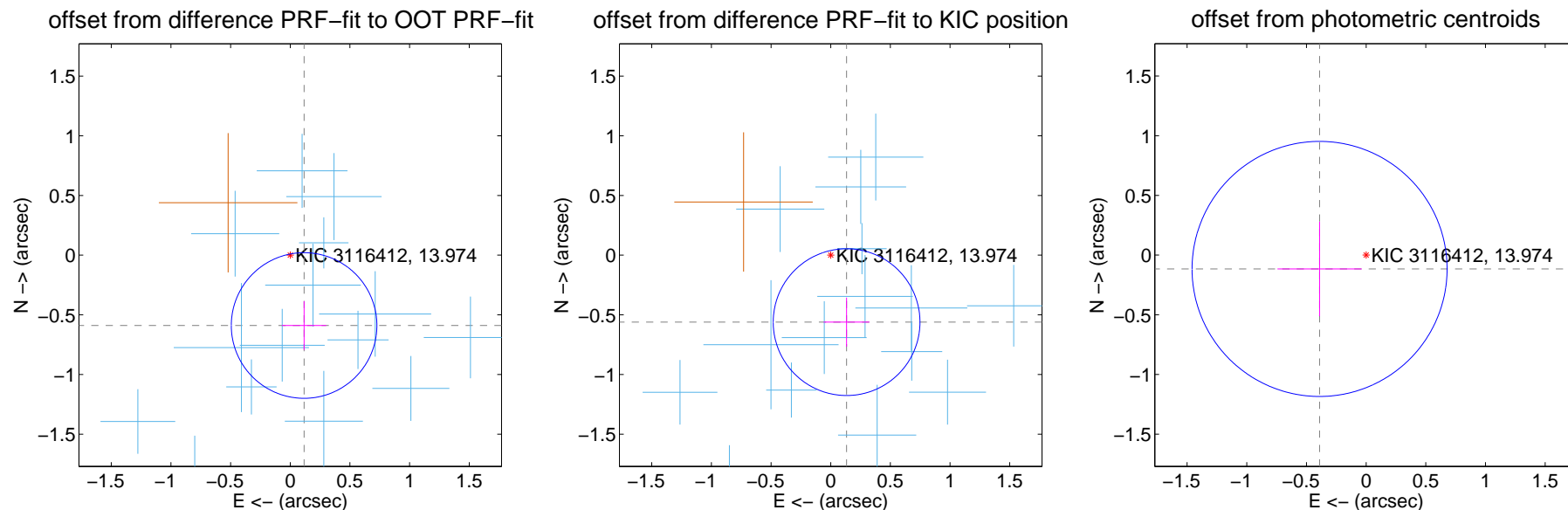
DV Centroid Data

Supplemental centroid analysis for 003116412-01. Kepler magnitude: 13.97. Transit SNR 33.15

There are 15 quarters with good PRF difference image offsets

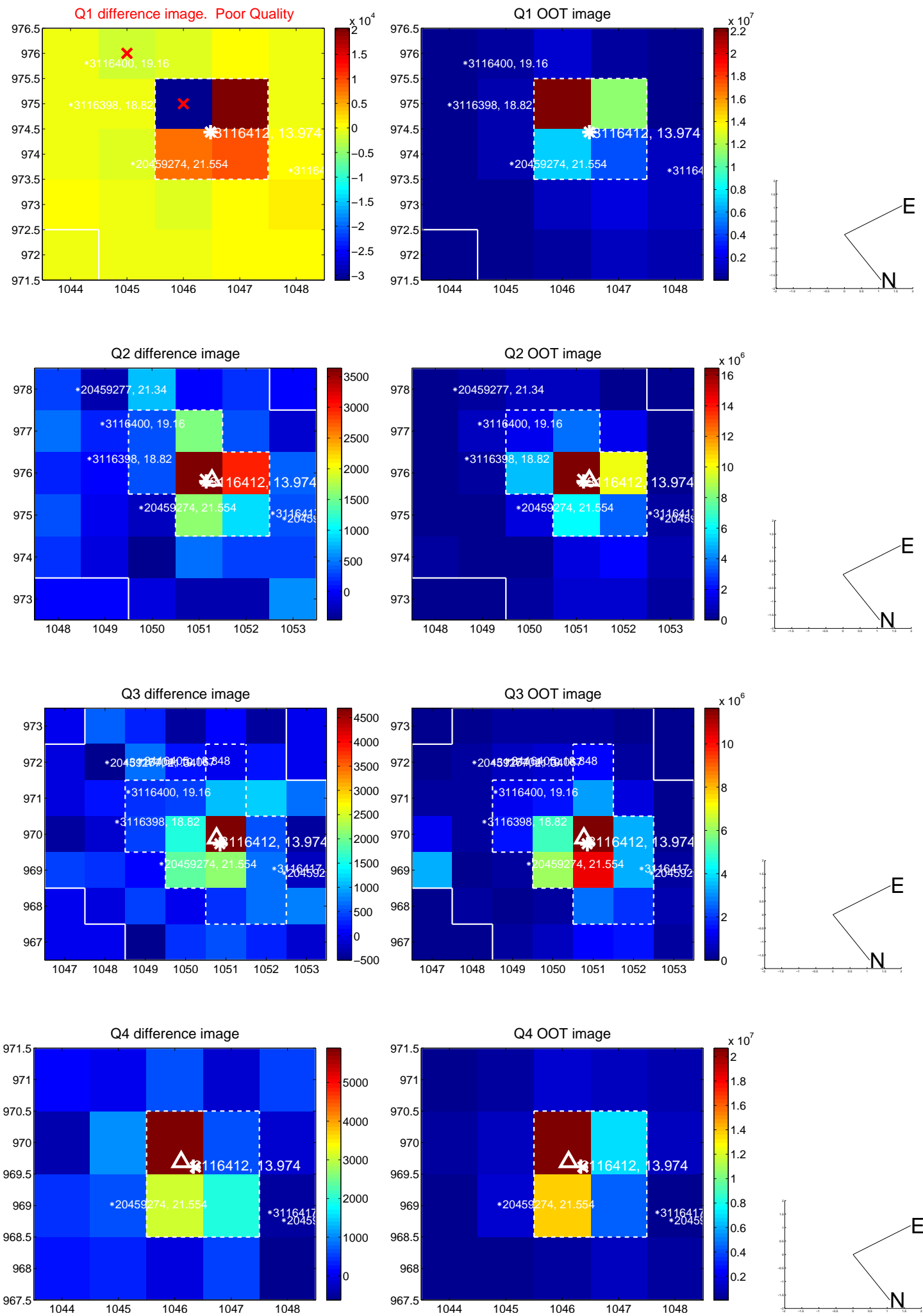
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.601 ± 0.203 | 2.95 | -0.116 ± 0.186 | -0.589 ± 0.204 |
| PRF-fit source offset from KIC position | 0.577 ± 0.205 | 2.81 | -0.133 ± 0.192 | -0.561 ± 0.206 |
| photometric centroid source offset | 0.41 ± 0.36 | 1.14 | 0.39 ± 0.35 | -0.12 ± 0.40 |

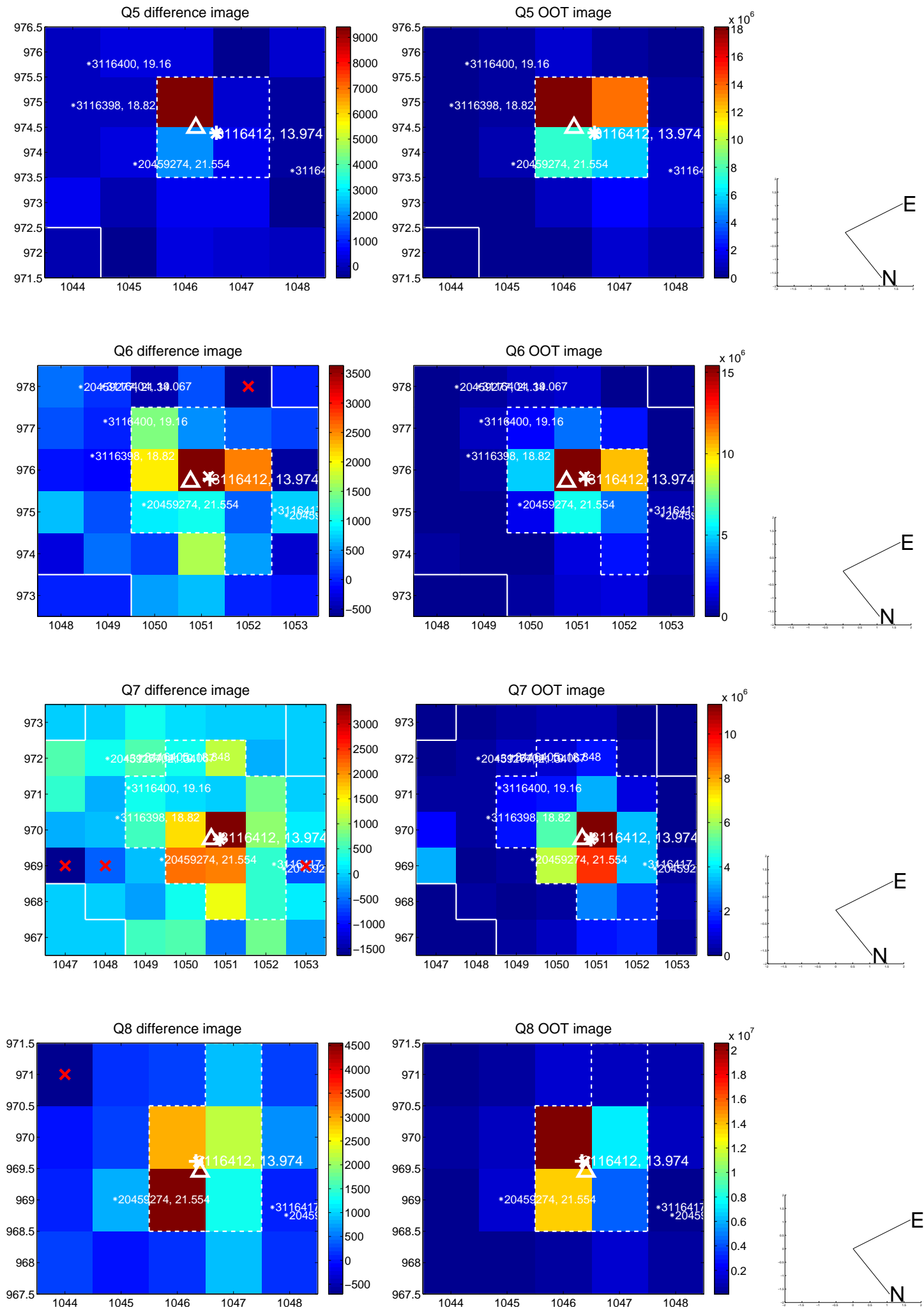


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

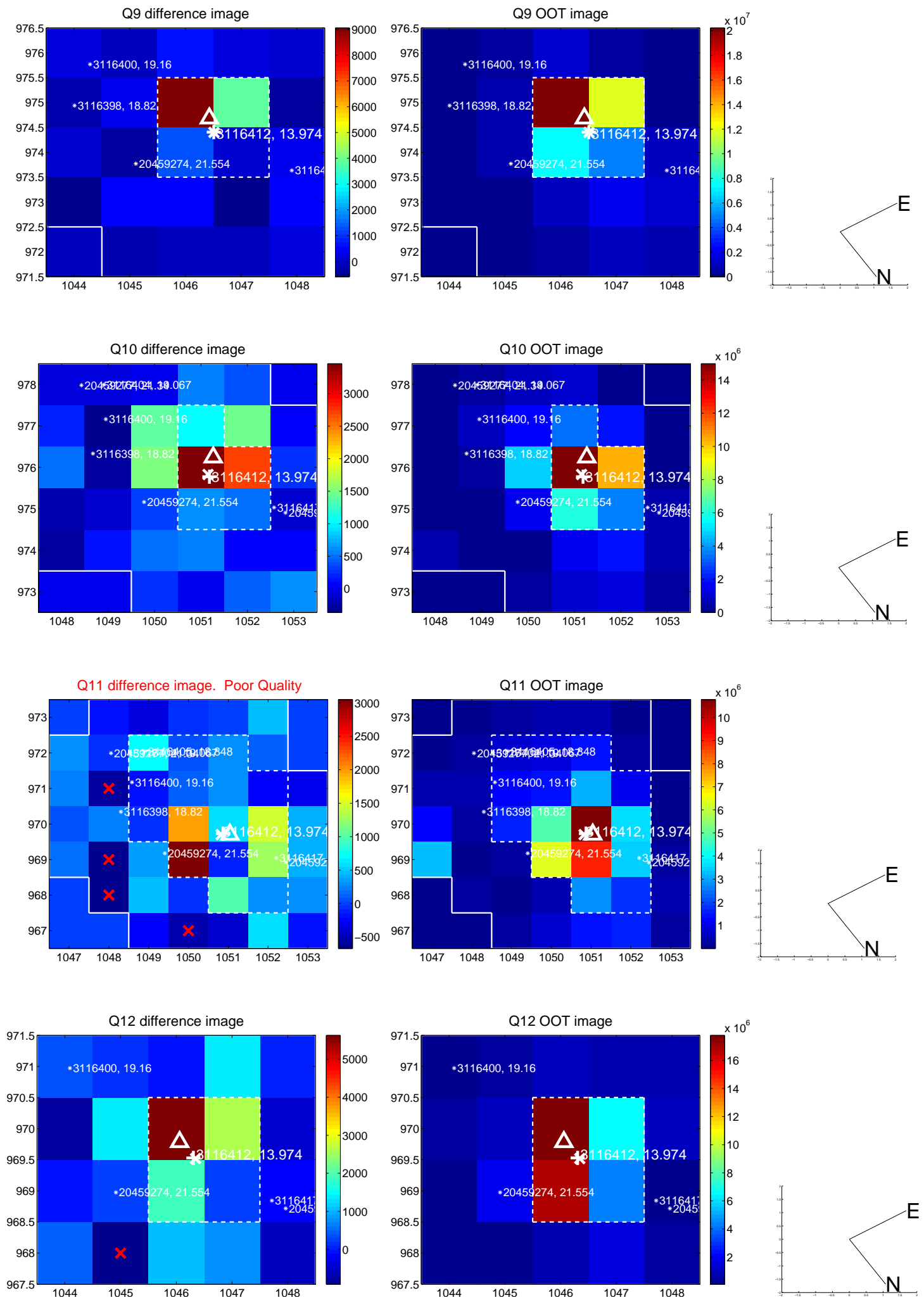
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



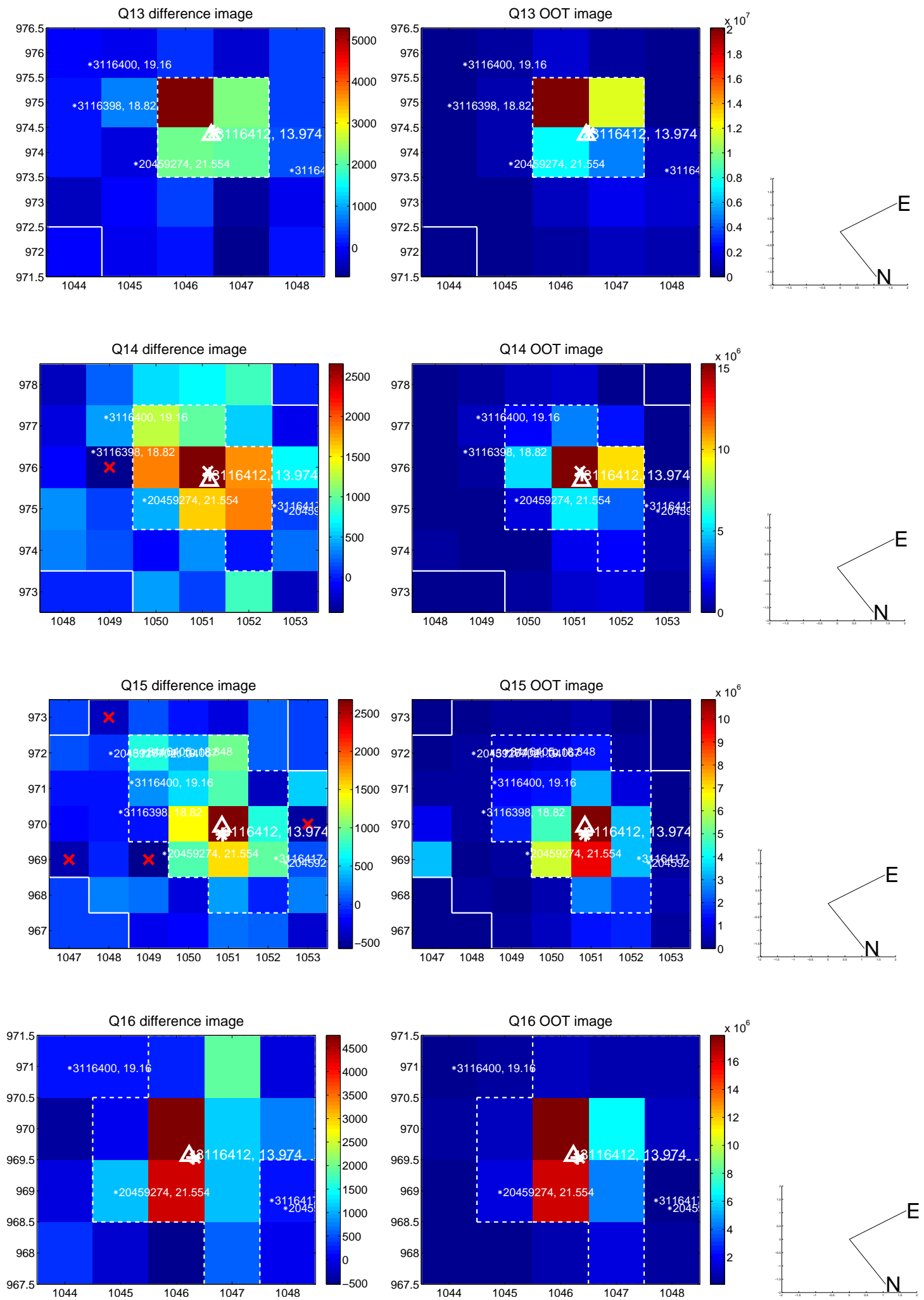
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

